JC05 Rec'd PCT/PTO 23 SEP 2005 10/550280

SEQUENCE LISTING

<110> NIPPON MEDICAL SCHOOL FOUNDATION

<120> Cell death-inducing fusion gene specifically acting on cancer and gene product thereof

<130> PH-2011-PCT

<140>

<141>

<150> JP2003/081337

<151> 2003-03-24

<160> 27

<170> PatentIn Ver. 2.1

. <210> 1

<211> 579

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1).. (579)

<400> 1

96	cag	atc	ttc	ggt	cag	ctt	ttg	ctt	gcc	ggg	aca	aag	atg	atc	cag	gag
	Gln															
			30					25					20			
144	gac	ctg	gcc	ctg	gag	ccc	gca	gag	ggg	ggg	atg	cga	ggg	gca	cga	gat
			Ala													
	-			45					40	•			•	35	J	
192	aag	ctc	tgt	gag	agc	ctg	aag	aag	acc	tcc	gcg	gat	cag	cct	gtg	ccg
			Cys													
	•		•		60			,		55					50	
240	att	atg	agg	cag	ctg	gag	atg	aac	agt	gac	ctg	gaa	gac	ggg	atc	cgc
			Arg													
	80					75					70			_		65
																~
288	gca	gtg	cga	ttc	ttt	gtc	gag	cga	ссс	tcc	gac	aca	gac	gtg	gcc	gcc
			Arg													
		95					90					85				
336	gcc	gtc	gtt	cgg	ggc	tgg	aac	ttc	aac	ggc	gac	tct	ttt	atg	gac	gct
			Val													
			110			-		105			_		100		-	

ctt ttc tac ttt gcc agc aaa ctg gtg ctc aag gcc ctg tgc acc aag

Leu Phe Tyr Phe Ala Ser Lys Leu Val Leu Lys Ala Leu Cys Thr Lys

gtg	ccg	gaa	ctg	atc	aga	acc	atc	atg	ggc	tgg	aca	ttg	gac	ttc	ctc	432
Val	Pro	Glu	Leu	Ile	Arg	Thr	Ile	Met	Gly	Trp	Thr	Leu	Asp	Phe	Leu	
	130					135					140					
cgg	gag	cgg	ctg	ttg	ggc	tgg	atc	caa	gac	cag	ggt	ggt	tgg	gac	ggc	480
Arg	Glu	Arg	Leu	Leu	Gly	Trp	Ile	Gln	Asp	Gln	Gly	Gly	Trp	Asp	Gly	
145					150					155					160	
ctc	ctc	tcc	tac	ttt	ggg	acg	ccc	acg	tgg	cag	acc	gtg	acc	atc	ttt	528
Leu	Leu	Ser	Tyr	Phe	Gly	Thr	Pro	Thr	Trp	Gln	Thr	Val	Thr	Ile	Phe	
				165					170					175		
gtg	gcg	gga	gtg	ctc	acc	gcc	tcg	ctc	acc	atc	tgg	aag	aag	atg	ggc	576
Val	Ala	Gly	Val	Leu	Thr	Ala	Ser	Leu	Thr	Ile	Trp	Lys	Lys	Met	Gly	
			180					185					190			
tga																579
Z010																
<210		າວ														
	() 19 () pp															
	2> PR 3> Hc		anio	nc												
\210)/ IIC	iiio s	apre	5115												
<400)> 2															
		Gly	Ser	Gly	Glu	Gln	Pro	Arg	Gly	Gly	Gly	Pro	Thr	Ser	Ser	
1	_	-		5					10	·	-			15		
	G1n	Ile	Met	Lys	Thr	G1y	Ala	Leu	Leu	Leu	Gln	Gly	Phe		Gln	
			20					25					30			
Asp	Arg	Ala	Gly	Arg	Met	Gly	Gly	Glu	Ala	Pro	Glu	Leu	Ala	Leu	Asp	

45

175

Pro Val Pro Gln Asp Ala Ser Thr Lys Lys Leu Ser Glu Cys Leu Lys 50 55 60 Arg Ile Gly Asp Glu Leu Asp Ser Asn Met Glu Leu Gln Arg Met Ile 70 65 75 80 Ala Ala Val Asp Thr Asp Ser Pro Arg Glu Val Phe Phe Arg Val Ala 90 85 95 Ala Asp Met Phe Ser Asp Gly Asn Phe Asn Trp Gly Arg Val Val Ala 100 105 110 Leu Phe Tyr Phe Ala Ser Lys Leu Val Leu Lys Ala Leu Cys Thr Lys 120 115 125 Val Pro Glu Leu Ile Arg Thr Ile Met Gly Trp Thr Leu Asp Phe Leu 130 135 140 Arg Glu Arg Leu Cly Trp Ile Gln Asp Gln Gly Gly Trp Asp Gly 150 145 155 160

Val Ala Gly Val Leu Thr Ala Ser Leu Thr Ile Trp Lys Lys Met Gly
180 185 190

Leu Leu Ser Tyr Phe Gly Thr Pro Thr Trp Gln Thr Val Thr Ile Phe

170

165

<210> 3

<211> 999

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1).. (999)

<400	0> 3															
atg	gcc	tgc	gat	tgc	cgt	ggt	gat	tgt	ttt	tgt	ggt	ggt	atg	agc	aag	48
Met	Ala	Cys	Asp	Cys	Arg	Gly	Asp	Cys	Phe	Cys	Gly	Gly	Met	Ser	Lys	
1				5					10					15		
ggc	gag	gaa	ctg	ttc	act	ggc	gtg	gtc	cca	att	ctc	gtg	gaa	ctg	gat	96
Gly	Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	Val	Glu	Leu	Asp	
			20					25					30			
ggc	gat	gtg	aat	ggg	cac	aaa	ttt	tct	gtc	agc	gga	gag	ggt	gaa	ggt	144
Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly	Glu	Gly	
		35					40					45				
gat	gcc	aca	tac	gga	aag	ctc	acc	ctg	aaa	ttc	atc	tgc	acc	act	gga	192
Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	Thr	Thr	Gly	
	50					55					60					
aag	ctc	cct	gtg	cca	tgg	cca	aca	ctg	gtc	act	acc	ttc	acc	tat	ggc	240
Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Phe	Thr	Tyr	Gly	
65					70					75					80	
gtg	cag	tgc	ttt	tcc	aga	tac	cca	gac	cat	atg	aag	cag	cat	gac	ttt	288
Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	His	Asp	Phe	
				85					90					95		
												٠				

ttc aag agc gcc atg ccc gag ggc tat gtg cag gag aga acc atc ttt 336

Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe

100 105 110

ttc	aaa	gat	gac	ggg	aac	tac	aag	acc	cgc	gct	gaa	gtc	aag	ttc	gaa	384
Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	Phe	Glu	-
		115					120					125				
ggt	gac	acc	ctg	gtg	aat	aga	atc	gag	ctg	aag	ggc	att	gac	ttt	aag	432
Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	Phe	Lys	
	130					135					140					
gag	gat	gga	aac	att	ctc	ggc	cac	aag	ctg	gaa	tac	aac	tat	aac	tcc	480
Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr	Asn	Ser	
145					150					155					160	
cac	aat	gtg	tac	atc	atg	gcc	gac	aag	caa	aag	aat	ggc	atc	aag	gtc	528
His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile	Lys	Val	
				165					170					175		
aac	ttc	aag	atc	aga	cac	aac	att	gag	gat	gga	tcc	gtg	cag	ctg	gcc	576
Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	Gln	Leu	Ala	
			180					185					190			
gac	cat	tat	caa	cag	aac	act	cca	atc	ggc	gac	ggc	cct	gtg	ctc	ctc	624
Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	Val	Leu	Leu	
		195					200					205			,	
												•				
cca	gac	aac	cat	tac	ctg	tcc	acc	cag	tct	gcc	ctg	tct	aaa	gat	ccc	672
Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu	Ser	Lys	Asp	Pro	
	210					215					220					
aac	gaa	aag	aga	gac	cac	atg	gtc	ctg	ctg	gag	ttt	gtg	acc	gct	gct	720
Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe	Val	Thr	Ala	Ala	

225 230 235 240

ggg atc aca cat ggc atg gac gag ctg tac aag gcc ctt ttc tac ttt 768

Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys Ala Leu Phe Tyr Phe

245 250 255

gcc agc aaa ctg gtg ctc aag gcc ctg tgc acc aag gtg ccg gaa ctg 816
Ala Ser Lys Leu Val Leu Lys Ala Leu Cys Thr Lys Val Pro Glu Leu
260 265 270

atc aga acc atc atg ggc tgg aca ttg gac ttc ctc cgg gag cgg ctg 864

Ile Arg Thr Ile Met Gly Trp Thr Leu Asp Phe Leu Arg Glu Arg Leu
275 280 285

ttg ggc tgg atc caa gac cag ggt ggt tgg gac ggc ctc ctc tcc tac 912
Leu Gly Trp Ile Gln Asp Gln Gly Gly Trp Asp Gly Leu Leu Ser Tyr
290 295 300

ttt ggg acg ccc acg tgg cag acc gtg acc atc ttt gtg gcg gga gtg 960 Phe Gly Thr Pro Thr Trp Gln Thr Val Thr Ile Phe Val Ala Gly Val 305 310 315 320

ctc acc gcc tca ctc acc atc tgg aag aag atg ggc tga 999
Leu Thr Ala Ser Leu Thr Ile Trp Lys Lys Met Gly
325 330

<210> 4

<211> 332

<212> PRT

<213> Homo sapiens

<40	0> 4														
Met	Ala	Cys	Asp	Cys	Arg	Gly	Asp	Cys	Phe	Cys	Gly	Gly	Met	Ser	Ly
1				5					10					15	
Gly	Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	Val	Glu	Leu	As
			20					25					30		
Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly	Glu	G1
		35					40					45			
Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	Thr	Thr	G1
	50					55					60				
Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Phe	Thr	Tyr	Gl
65					70					75					80
Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	His	Asp	Phe
				85					90					95	
Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	Thr	Ile	Phe
			100					105					110		
Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	Phe	Glı
		115					120					125	•		
Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	G1u	Leu	Lys	Gly	Ile	Asp	Phe	Lys
	130					135					140				
Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr	Asn	Ser
145					150					155			•		160
His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile	Lys	Val
				165					170					175	
Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	Gln	Leu	Ala
			180			٠		185					190		
Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	Val	Leu	Leu

0.400

Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro

Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala 225 230 235 240 Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys Ala Leu Phe Tyr Phe 245 250 255 Ala Ser Lys Leu Val Leu Lys Ala Leu Cys Thr Lys Val Pro Glu Leu 260 265 270 Ile Arg Thr Ile Met Gly Trp Thr Leu Asp Phe Leu Arg Glu Arg Leu 275 280 285 Leu Gly Trp Ile Gln Asp Gln Gly Gly Trp Asp Gly Leu Leu Ser Tyr 290 295 300 Phe Gly Thr Pro Thr Trp Gln Thr Val Thr Ile Phe Val Ala Gly Val 305 310 315 320 Leu Thr Ala Ser Leu Thr Ile Trp Lys Lys Met Gly 325 330

<210> 5

<211> 987

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(987)

<400> 5

atg gcc tgc aac ggt cgt tgc ggt ggt atg agc aag ggc gag gaa ctg 48 Met Ala Cys Asn Gly Arg Cys Gly Gly Met Ser Lys Gly Glu Glu Leu 5 10 1

ttc	act	ggc	gtg	gtc	cca	att	ctc	gtg	gaa	ctg	gat	ggc	gat	gtg	aat	96
Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	
			20					25					30			
ggg	cac	aaa	tţt	tct	gtc	agc	gga	gag	ggt	gaa	ggt	gat	gcc	aca	tac	144
Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly	Glu	G1y	Asp	Ala	Thr	Tyr	
		35					40					45				
gga	aag	ctc	acc	ctg	aaa	ttc	atc	tgc	acc	act	gga	aag	ctc	cct	gtg	192
Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val	
	50					55					60					
cca	tgg	cca	aca	ctg	gtc	act	acc	ttc	acc	tat	ggc	gtg	cag	tgc	ttt	240
Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Phe	Thr	Tyr	Gly	Val	Gln	Cys	Phe	
65					70					75					80	
tcc	aga	tac	cca	gac	cat	atg	aag	cag	cat	gac	ttt	ttc	aag	agc	gcc	288
Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	His	Asp	Phe	Phe	Lys	Ser	Ala	
				85					90					95		•
atg	ссс	gag	ggc	tat	gtg	cag	gag	aga	acc	atc	ttt	ttc	aaa	gat	gac	336
Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	Thr	Ile	Phe	Phe	Lys	Asp	Asp	
			100					105	٠				110			
ggg	aac	tac	aag	acc	cgc	gct	gaa	gtc	aag	ttc	gaa	ggt	gac	acc	ctg	384
Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	
		115					120					125				
gtg	aat	aga	atc	gag	ctg	aag	ggc	att	gac	ttt	aag	gag	gat	gga	aac	432
Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	

130 135 140

att	ctc	ggc	cac	aag	ctg	gaa	tac	aac	tat	aac	tcc	cac	aat	gtg	tac	480
Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	
145					150					155					160	
atc	atg	gcc	gac	aag	caa	aag	aat	ggc	atc	aag	gtc	aac	ttc	aag	atc	528
Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	
				165					170					175		
aga	cac	aac	att	gag	gat	gga	tcc	gtg	cag	ctg	gcc	gac	cat	tat	caa	576
Arg	His	Asn	Ile	Glu	Asp	G1y	Ser	Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	
			180					185					190			
cag	aac	act	cca	atc	ggc	gac	ggc	cct	gtg	ctc	ctc	cca	gac	aac	cat	624
Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	
		195					200					205				
tac	ctg	tcc	acc	cag	tct	gcc	ctg	tct	aaa	gat	ccc	aac	gaa	aag	aga	672
Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu	Ser	Lys	Asp		Asn	Glu	Lys	Arg	
	210					215					220					
								•.								
gac	cac	atg	gtc	ctg	ctg	gag	ttt	gtg	acc	gct	gct	ggg	atc	aca	cat	720
Asp	His	Met	Val	Leu	Leu	Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	His	
225					230					235					240	
		•														
ggc	atg	gac	gag	ctg	tac	aag	gcc	ctt	ttc	tac	ttt	gcc	agc	aaa	ctg	768
Gly	Met	Asp	Glu	Leu	Tyr	Lys	Ala	Leu	Phe	Tyr	Phe	Ala	Ser	Lys	Leu	
				245					250					255		

gtg ctc aag	gcc ctg	tgc acc	aag gt	tg ccg	gaa ctg	atc aga	acc atc	816
Val Leu Lys	Ala Leu	Cys Thr	Lys Va	al Pro (Glu Leu	Ile Arg	g Thr Ile	
	260		26	65		270)	
atg ggc tgg	aca ttg	gac ttc	ctc cg	gg gag (cgg ctg	ttg ggd	tgg atc	864
Met Gly Trp	Thr Leu	Asp Phe	Leu Ar	g Glu A	Arg Leu	Leu Gly	Trp Ile	
275			280			285		
caa gac cag	ggt ggt	tgg gac	ggc ct	c ctc 1	tcc tac	ttt ggg	acg ccc	912
Gln Asp Gln	Gly Gly	Trp Asp	Gly Le	u Leu S	Ser Tyr	Phe Gly	Thr Pro	
290		295			300			
acg tgg cag	acc gtg	acc atc	ttt gt	g gcg g	gga gtg	ctc acc	gcc tca	960
Thr Trp Gln	Thr Val	Thr Ile	Phe Va	l Ala (Gly Val	Leu Thr	Ala Ser	
305		310		3	315		320	
ctc acc atc	tgg aag	aag atg	ggc tg	a			•	987
Leu Thr Ile	Trp Lys	Lys Met	Gly					
	325							
<210> 6								
⟨211⟩ 328								
<212> PRT	٠.							
<213> Homo s	apiens							
<400> 6								
Met Ala Cys	Asn Gly	Arg Cys	Gly Gl	y Met S	Ser Lys	Gly Glu	Glu Leu	
1	5	1.0		10			15	

Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn

			20					25					30)	
Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly	Glu	Gly	Asp	Ala	Thr	Туг
		35					40					45			
Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val
	50					55					60				
Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Phe	Thr	Tyr	Gly	Val	Gln	Cys	Phe
65					70					75					80
Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	His	Asp	Phe	Phe	Lys	Ser	Ala
				85					90					95	
Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	Thr	Ile	Phe	Phe	Lys	Asp	Asp
			100					105					110		
G1y	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu
		115					120	•				125			
Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn
	130					135					140				
Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr
145					150					155					160
Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile
				165					170					175	•
Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	Gln	Leu	Ala	Asp	His	Tyr	Gln
			180					185					190		
Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His
		195					200					205			
Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg
	210					215					220				
Asp	His	Met	Val	Leu	Leu	Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	His
225					230					235					240
Gly	Met	Asp	Glu	Leu	Tyr	Lys	Ala	Leu	Phe	Tyr	Phe	Ala	Ser	Lys	Leu
				245		-			250					255	
Val	Leu	Lys	Ala	Leu	Cys	Thr	Lys	Val	Pro	Glu	Leu	Ile	Arg	Thr	Ile

260 265 270

Met Gly Trp Thr Leu Asp Phe Leu Arg Glu Arg Leu Leu Gly Trp Ile
275 280 285

Gln Asp Gln Gly Gly Trp Asp Gly Leu Leu Ser Tyr Phe Gly Thr Pro 290 295 300

Thr Trp Gln Thr Val Thr Ile Phe Val Ala Gly Val Leu Thr Ala Ser 305 310 315 320

Leu Thr Ile Trp Lys Lys Met Gly

325

<210> 7

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 7

Cys Leu Ser Ser Arg Leu Asp Ala Cys

1 . 5

<210> 8

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide <400> 8 Cys Asn Ser Arg Leu His Leu Arg Cys 5 1 <210> 9 <211> 9 <212> PRT <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Homing peptide <400> 9 Cys Glu Asn Trp Trp Gly Asp Val Cys 1 5 <210> 10 <211> 21 <212> PRT <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Homing peptide <400> 10 Trp Arg Cys Val Leu Arg Glu Gly Pro Ala Gly Gly Cys Ala Trp Phe 5 10 15 1

```
Asn Arg His Arg Leu
```

<210> 11

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 11

Cys Leu Pro Val Ala Ser Cys

5

1

<210> 12

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 12

Cys Gly Ala Arg Glu Met Cys

1

5 -

<210> 13

⟨211⟩ 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 13

Cys Lys Ser Thr His Asp Arg Leu Cys

5

1

<210> 14

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

′ <400> 14

Cys Gly Asn Lys Arg Thr Arg Gly Cys

1

5

<210> 15

<211> 5

<212> .PRT

<213> Artificial Sequence

```
<220>
```

<223> Description of Artificial Sequence:Homing peptide

<400> 15

Ala Pro Arg Pro Gly

1

5

<210> 16

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 16

Lys Gln Ala Gly Asp Val

1

5

<210> 17

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 17

Lys Arg Leu Asp Gly Ser

5

<210> 18

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homing peptide

<400> 18

Asp Gly Glu Ala

1

<210> 19

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<220>

<221> misc_feature

<222> (1)..(2)

 $\langle 223 \rangle$ n is A, C, G or T

<400> 19

nnatcgatcc accatgagca agggcgag	28
<210≻ 20	
<211> 35·	
<212> DNA	
<213> Artificial Sequence	
⟨220⟩	
<223> Description of Artificial Sequence:Primer	
⟨400⟩ 20	
ctggcaaagt agaaaagggc cttgtacagc tcgtc	35
<210> 21	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<pre><223> Description of Artificial Sequence:Primer</pre>	
<400> 21	
gcccttttct actttgccag	20
	•
<210> 22	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	

<223> Description of Artificial Sequence: Primer	
<220>	
<221> misc_feature	
<222> (1) (2)	
<223> n is A, C, G or T	
<400> 22	
nntctagatc agcccatctt cttcca	26
<210> 23	
<211> 57	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer	
<400> 23	
ccatggcctg cgattgccgt ggtgattgtt tttgtggtgg tatgagcaag ggcgagg	57
<210> 24	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
4000	
<220>	
<223> Description of Artificial Sequence: Primer	

<220>

<221> misc_feature <222> (1)..(4) <223> n is A, C, G or T <400> 24 22 nnnnccatgg cctgcgattg cc <210> 25 <211> 18 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Primer <400> 25 18 tggaaaagca ctgcacgc <210> 26 <211> 45 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Primer <400> 26 45 ccatggcctg caacggtcgt tgcggtggta tgagcaaggg cgagg

<210> 27

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<220>

<221> misc_feature

<222> (1)..(4)

 $\langle 223 \rangle$ n is A, C, G or T

<400> 27

nnnnccatgg cctgcaacgg tc